REMARKS/ARGUMENTS

Favorable reconsideration and allowance of the present application are respectfully requested in view of the following remarks. Claims 1-51 remain pending.

In the Office Action, the Examiner makes the following rejections:

- claims 1, 10, 26-28 and 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kekki et al. (U.S. Publication No. 2003/0099255 A1) (hereinafter Kekki) in view of Wu (U.S. Patent No. 7,171,206 B2);
- claims 2, 3, 7-9, 21, 23, 24, 29, 30, 34-36, 47, 49 and 50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kekki in view of Wu, and further in view of Wang (U.S. Patent No. 5,539,922);
- claims 11-15 and 37-41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kekki in view of Wu, and further in view of Beming et al. (U.S. Publication No. 2003/0003919 A1) (hereinafter Beming);
- claims 4, 6, 20, 22, 31, 33, 46 and 48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kekki in view of Wu, and further in view of Molander et al. (U.S. Publication No. 2004/0203640 A1) (hereinafter Molander);
- claims 5, 16, 17, 32, 42 and 43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kekki in view of Wu, and further in

view of Willars et al. (U.S. Publication No. 2001/0053145 A1) (hereinafter Willars);

- claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kekki in view of Wu, and further in view of Gopalakrishna et al. (U.S. Publication No. 2002/0183053 A1) (hereinafter Gopalakrishna); and
- claims 25 and 51 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kekki in view of Wu in view of Wang and further in view of Gerry et al. (U.S. Publication No. 2004/0029615 A1) (hereinafter Gerry).

All prior art rejections are respectfully traversed. Independent claim 1 is directed toward a method of providing a diversity handover (DHO) in a mobile telecommunication network. A non-limiting example of the network is a CDMA network. In general, it is desirable to provide high quality voice and data services for mobile users as well as to provide high capacity and universal coverage. However, this is difficult to achieve in some situations due to unreliable radio channels. *See e.g., Specification, p.1, ll.13-18.*

DHO, also referred to as macro diversity, is a technique to combat link reliability problems over the radio interface. *See e.g., Specification, Abstract.* The DHO technique enables a mobile terminal to communicate with a fixed network by more than one radio link. That is, the mobile terminal can send/receive information towards/from more than Node B simultaneously. This is illustrated in Fig. 5 which shows an example scenario with a mobile

terminal using five macro diversity legs. As the propagation conditions between the mobile terminal and the different Node Bs, are different at the same moment in time, the resulting quality of the combination of the received signals is often better than the quality of each individual signal. Thus, DHO can improve radio link quality. *See Specification, p.2, l.23 – p.3, l.2.*

DHO functionality involves splitting of the downlink data flows and combining the uplink data flows. Splitting involves ensuring that a copy of each downlink DCH FP frame is sent through each macro diversity leg. *See Specification, p.3, ll.4 – 13.* Combining involves selection of the best piece of data out of the candidates that were received through the different macro diversity legs. Currently, all macro diversity functionality, e.g., for a soft handover, resides in the RNC. That is, the splitting for the downlink and the combining for the uplink are both performed in the RNC. *See Specification, p.3, l.25 – p.4, l.25.*

A problem in the conventional macro diversity solution is that the split downlink flows and the uncombined uplink flows of user data are transported all the way between the RNC and the Node B. That results in that costly transmission resources are consumed in the network, which also results in significant costs for the operators. *See Specification, p.4, ll.2 – 6.*

However, in a non-limiting embodiment, the DHO functionality is enabled in a non-RNC node such as a Node B. This was implicit in independent claim 1, which is now amended to be explicitly recite "wherein the DHO functionality performed by the first DHO tree node comprises splitting of

downlink data flows and combining of uplink data flows" and "wherein the first DHO tree node is separate from the RNC." As recited, it is clear that the first DHO tree node, which performs DHO functionality, is a different node than the RNC.

In the Office Action, Examiner apparently considers the RNC described in Kekki as being equivalent to the claimed first DHO tree node of claim 1. *See Office Action, p.3, ll.1-5.* However, claim 1 makes clear that the first DHO tree node is a node other than the RNC. Wu cannot be relied upon to correct for this and other deficiencies of Kekki.

The following is also noted. As mentioned above, claim 1 is directed toward a method of providing a diversity handover (DHO) in a mobile telecommunication network. DHO involves multiple simultaneous radio links between the mobile terminal and multiple Node Bs.

On the other hand, Kekki is directed to MAC layer inverse multiplexing in a third generation radio access network. Kekki notes that the CN entity can deliver data at a rate higher than the UE can accept on a single channel. *See Kekki, [0021].* To solve this problem, Kekki provides that the RNC split the high speed channel into multiple low speed sub channels. The multiple sub channels are communicated to the Node B, and then Node B transmits the data received from the RNC over a single radio link to the mobile terminal.

This is illustrated in Figs. 2A and 2B of Kekki in which shows the RNC 11 as being made of the RLC layer 13, MAC layer 14 and the FP layer 16. The RLC 13 layer provides a plurality of RLC PDUs to the in a high speed channel

R1, and the MAC layer 14 provides the RLC PDUs as MAC PDUs over plurality of low speed MAC PDU channels M11, M12, and M13. The FP layer 16 packages the MAC PDU flows into corresponding FP frames and sends the FP frames to the Node B 17 over the Iub interface. *See Kekki, [0038]; Figs. 2A and 2B.* The Node B 17 in turn transmits the FP frames over a single radio link to the mobile terminal UE 18.

As seen, Kekki is directed to providing a radio network element, e.g., RNC, for communicating to a mobile user equipment (UE) a higher rate data flow received from a core network (CN) entity, in which the higher rate data flow is provided to the radio network element at a higher rate than the UE can accept. *See Kekki, [0021].* In effect, the RNC serves as a buffering mechanism so that the data from the CN entity can be delivered to the UE over a single radio link.

Kekki is not directed to performing any type of handover. It is completely unrelated to claim 1. Furthermore, the only a single Node B is involved in the transfer of data to the mobile terminal. This is completely in contrast with claim 1 which is directed to macro diversity in which the mobile terminal is in simultaneous communication with multiple Node Bs. Simply put, Kekki teaches away. *See KSR v. Teleflex, 550 US___, 127 S.CT. 1727 (2007) ("When the prior art teaches away from combining certain know elements, discovery of successful means of combining them is more likely to be non-obvious.")*

Wu is deficient as well. Wu is directed toward a method of transferring a communication session between two service areas in which the services areas

are of completely different communication protocols, e.g., from GSM to wifi or Bluetooth. *See e.g., Wu, c.1, l.57 – c.2, l.34.* As such, Wu does not even contemplate the mobile terminal being in simultaneous radio communication with two different base stations of two different service areas. Indeed, the handover signaling protocol illustrated in FIG. 5 is clear that the gateway 103 holds the session – i.e., no data being sent to or received from the mobile terminal 104 – while the handover from the first proxy transcoder 111 to the second proxy transcoder 112 is being performed. Thus, like Kekki, Wu also teaches away.

For at least the reasons stated above, claim 1 is distinguishable over the combination of Kekki and Wu. Independent claims 28 and 45 are distinguishable over the combination of Kekki and Wu for similar reasons. Wang, Beming, Molander, Willars, Gopalakrishna and Gerry – individually or in any combination thereof – do not correct the above noted and other deficiencies of Kekki and Wu. Therefore, independent claims are also distinguishable over any combination of Kekki, Wu, Wang, Beming, Molander, Willars, Gopalakrishna and Gerry. Claims 2-27, 29-44 and 46-51 are distinguishable over the same references by virtue of their dependencies from independent claims as well as on their own merits.

For at least the reasons discussed above, Applicant respectfully requests that the rejections of claims 1-51 be withdrawn.

All objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in

condition for allowance. Should there be any outstanding matters that need to be resolved, the Examiner is respectfully requested to contact Hyung Sohn (Reg. No. 44,346), to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant respectfully petitions for a (3) month extension of time for filing a reply in connection with the present application, and the required fee is attached hereto.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: /Hyung N. Sohn/
Hyung N. Sohn
Reg. No. 44,346

HNS/edg
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100